

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A tilt angle measuring apparatus ~~(1)~~ comprising:
a plurality of ultrasonic sensors, ~~(3, 4)~~ each of which has a function of transmitting an ultrasonic wave to a road surface and a function of receiving the ultrasonic wave reflected by the road surface;
signal processing means ~~(5)~~ that ~~controls~~control these ultrasonic sensors and ~~computes~~compute a tilt angle of the road surface from signals detected by the ultrasonic sensors;
and
a case ~~(2)~~ that houses the ultrasonic sensors and the signal processing means ~~in such a way that they do not move~~, wherein
the case includes a case body ~~(6)~~ for housing the ultrasonic sensors and a cover ~~(7)~~ for covering an upper portion of the case body, and
the case body is provided with a bottom plate ~~(21)~~ having windows, ~~(23, 24)~~ each of which exposes an ultrasonic wave transmitting/receiving face of each of the ultrasonic sensors, a side plate ~~(22)~~ extending upward from a peripheral edge of the bottom plate and abutting against

a bottom surface of the cover, and horn parts, ~~(27, 28)~~ each of which extends downward from the bottom plate so as to surround each of the windows.

2. (currently amended): A tilt angle measuring apparatus ~~(31)~~ comprising:

a plurality of ultrasonic sensors, ~~(33, 34)~~ each of which has a function of transmitting an ultrasonic wave to a road surface and a function of receiving the ultrasonic wave reflected by the road surface;

signal processing means ~~(35)~~ that ~~controls~~ control these ultrasonic sensors and ~~computes~~ compute a tilt angle of the road surface from signals detected by the ultrasonic sensors; and

a case ~~(32)~~ that houses the ultrasonic sensors and the signal processing means ~~in such a way that they do not move~~, wherein

the case includes a case body ~~(36)~~ arranged on a vehicle side, a holder ~~(37)~~ that holds the ultrasonic sensors and is supported in the case body, and a cover ~~(38)~~ that has horn parts ~~(76, 77)~~ directly below the ultrasonic sensors and covers a lower portion of the holder.

3. (currently amended): The tilt angle measuring apparatus ~~(31)~~ as claimed in claim 2, wherein the holder ~~(37)~~ includes a first bottom plate ~~(51)~~ having windows, ~~(55, 56)~~ each of which exposes an ultrasonic wave transmitting/receiving face of each of the ultrasonic sensors and a first side plate ~~(52)~~ extending upward from a peripheral edge of the first bottom plate, and the cover ~~(38)~~ includes a second bottom plate ~~(71)~~ that has lower openings ~~(76b, 77b)~~ for passing the ultrasonic wave and is arranged apart from the first bottom plate, a second side plate ~~(72)~~ extending upward from a peripheral edge of the second bottom plate, and the horn parts ~~(76, 77)~~

so as to extend from the lower openings to bottom surfaces of the ultrasonic sensors, respectively.

4. (currently amended): The tilt angle measuring apparatus ~~(31)~~ as claimed in claim 2, wherein inner slanted faces ~~(76e, 77e)~~ of the horn parts ~~(76, 77)~~ are connected to lower opening faces ~~(76e, 77e)~~ by smooth curved faces ~~(76d, 77d)~~, respectively.

5. (currently amended): The tilt angle measuring apparatus as claimed in claim ~~23~~, further comprising cylindrical parts ~~(57, 58)~~ that extend upward so as to surround the windows ~~(55, 56)~~ from the bottom plate ~~(51)~~ and house the ultrasonic sensors ~~(33, 34)~~ from below, respectively.

6. (currently amended): The tilt angle measuring apparatus as claimed in claim 5, further comprising means ~~(33e, 34e)~~ for engaging the ultrasonic sensors ~~(33, 34)~~ with the cylindrical parts ~~(57, 58)~~, respectively.

7. (currently amended): The tilt angle measuring apparatus as claimed in claim 2, wherein the cover ~~(38)~~ has water draining holes ~~(78)~~.

8. (currently amended): The tilt angle measuring apparatus as claimed in claim 2, further comprising members ~~(79)~~ that are arranged to surround the horn parts ~~(76, 77)~~ and absorb or interrupt the ultrasonic wave.